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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,487	10/17/2003	Jock D. MacKinlay	131755	7951
27074 7590 03/07/2008 OLIFF & BERRIDGE, PLC. P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER TSEGAYE, DANIEL	
			ART UNIT 2629	PAPER NUMBER
			NOTIFICATION DATE 03/07/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/687,487	Applicant(s) MACKINLAY, JOCK D.	
	Examiner DANIEL TSEGAYE	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/04/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 3 recites the limitation "the bezel based seam information" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 24 directed to carrier waves which is non statutory subject matter under 35 USC 101. The claim is not directed to useful process, manufacture or composition matter the will render the claim statutory.

As to claim 24, Signals and carrier waves, which are not a manufacture within the meaning of 101. Therefore, it's non-statutory under 35 USC 101.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 10-21, 23, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Dubin (U.S. Pub # 2002/0080302).

As to claim 1, Dubin discloses a method of managing seams comprising the steps of: determining a composite display (e.g., a screen (component 16) that comprises multiple display device) comprising at least two displays (display section 32 in fig. 1 page 2, paragraph 0025 lines 1-3), each display associated with a view into a contiguous virtual display space (screen 16 in fig. 1 see last 3 lines of paragraph 0021); determining seam information associated with the non-sensible area (dead band area 34) between the at least two displays (see, [0030] and [0031] where it discloses seam information is determined by the amount of magnification in combination with direction. Projection is used to eliminate the gap (e.g., component 30 between the display and to generate a seamless image which is viewable by a viewer 26 located in front of screen 16); determining output information (e.g., output information are determined after combining magnification and direction information, see [0031]); determining display layout adjustments for output information associated with views into the contiguous virtual display space, the display layout adjustments based on the determined seam information and the output information (see paragraph [0031]); and displaying the output information for each display based on the determined display layout adjustments (see paragraph [0021]).

As to claim 12, a system for managing seams in composite display system comprising: an input/output circuit (figure 1 shows image generator inputting images to display controller and outputted to screen 16); a memory inherent that (image

generator 22 in figure 1 comprises memory); a processor (display controller 20 and paragraphs [0053-0054] for determining output information to be displayed); a seam information determination circuit (see Fig. 1), that determines seam information between at least two displays (see rejection of claim 1 above); a display layout adjustment circuit that determines display layout adjustments for the output image information associated with views into the contiguous virtual display space, the display layout adjustments based on the determined seam information and the output information; and where the processor displays the output information for each display based on the determined display layout adjustments (see rejection of claim 1 above).

As to claim 23, Dubin teaches computer readable storage medium (22) including: computer readable program code (e.g., software program, see [0024]) embodied on the computer readable storage medium, the computer readable program code usable to program a computer for managing seams comprising the steps of:

determining a composite display (e.g., a screen (component 16) comprising at least two displays (see two displays In Fig. 1, component 12, see abstract, where it discloses multiple display devices), each display associated with contiguous views into a virtual display space (e.g., each display device 12 subdivided into a plurality of section sections 32 and each section 32 is configured to display a sectional image);

determining at least one seam between the at least two displays (see, [0030] and [0031]); determining output information (e.g., output information are determined after combining magnification and direction information, see [0031]);

determining display layout adjustments for each of the at least two displays associated with the views into virtual display space, the display layout adjustments based on the determined seam information and the output information (see paragraph [0031]); and

displaying the output information for each display based on the determined display layout adjustments (see paragraph [0021] and [0024] and [0031]).

As to claim 25, a system of managing seams comprising: a means for determining a composite display (e.g., system (10) include a screen (component 16) multiple displays (12) (see, Fig. 1), each display associated with a view into a contiguous virtual display space (e.g., each display device 12 subdivided into a plurality of section sections 32 and each section 32 is configured to display a sectional image); a means (lens assembly 14, provided an appropriate of magnification in combination of with appropriate amount and direction) for determining seam information associated with the non-sensible area between the at least two displays (see, [0030] and [0031]); a means (display controller 20 accounts for the subdivision of it display 12 (electronically or using a software, see 0025]) for determining output information (output information are determined after combining magnification and direction information, see [0031]); a means (lens assembly 14, provided an appropriate of magnification in combination of with appropriate amount and direction) for determining display layout adjustments for output information associated with views into the contiguous virtual display space (e.g., lens assemblies 14 of system 50 provide magnification such that size of each projected

sectional image on the display screen 16 [0034]), the display layout adjustments based on the determined seam information and the output information (by choosing an appropriate combination , dead-band region 34, see 0031); and a means (16) for displaying the output information for each display based on the determined display layout adjustments (the pixels on the edge of display section 32).

As to claim 2 and 13, Dubin teaches where the seam information is determined based on at least one of: determined manually (e.g., by measuring the gap and scale it, see [0023]).

As to claims 3 and 14, Dubin teaches where determining the seam information based on retrieving stored display information comprises: determining display information for the at least two displays (e.g., a screen (component 16) comprising at least two displays (see two displays In Fig. 1); and adding the bezel based seam information for each of the at least two displays (by magnifying information to cover the seam area, the information from both first and second display is superimposed (added) to produce the image on the screen 16, see Fig. 1).

As to claims 4 and 15, Dubin teaches wherein the seam information is dynamically (e.g., based on tiled information on the screen added or subtracted) determined based on sensor information (e.g., detector 24 senses the resulting pattern produced on screen 16, and to generates feedback signal 94).

As to claims 5 and 16, Dubin teaches wherein manually determining the seam information comprises measuring the area between the displays (e.g., system 10 uses projection to eliminate the gap (30) between adjacent display devices (12), see [0024]).

As to claims 6 and 17, Dubin teaches where determining the output information (system 10 an operating system which include component (16) which intercept the two displays) for each display associated with a view comprises intercepting output information from at least one of: the operating system level (e.g., display apparatus, see abstract).

As to claim 7, Dubin teaches where determining layout adjustments based on the determined seam information and output information comprises: determining display layout adjustments based on at least one of the seam information and the output information from a seam-aware output generator (22); determining display layout adjustments based on seam constrained movement of object elements and output information from a non-seam aware object element addressable output generator (e.g., display controller (20) configured to generate display control signals (28) in response to display signal received from the image generator (22); and determining display layout adjustments based on output information and at least one virtual display space repetition areas (e.g., the display controller (20) subdivides desired image (84) into a number of panels in accordance with the arrangement of display device (12) in tiled display system(10)).

As to claim 8, Dubin teaches where the repetition areas are based on at least one of pixels (e.g., the end pixels of (32) project the repetition areas, see Fig. 1).

As to claim 10, Dubin teaches where the display layout adjustments are performed by the output information generator (22) (see [0052]).

As to claim 11, Dubin teaches where the output information is displayed in the seam (e.g., each adjacent LCD image (90) in fig. 5 displayed on screen image (92)). As to claim 17, Dubin teaches where determining the output image information for each display is based on intercepting the output information from at least one of: a device driver level (e.g., the controller (20)).

6. Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by Branson (U.S. Pub # 2003/0071832).

As to claim 24, Branson teaches a control program stored in storage medium, useable to program a computer for managing seams, to a device for executing the program, the control program comprising:

Instructions (computer program, see paragraph 0011 the last 4 lines) for determining a composite display comprising at least two displays, each display associated with a view into a contiguous virtual display space (see the hammer in figure 1 and paragraph 0009);

instructions for determining at least one non-sensible seam between the at least two displays (the image of hammer displayed in figure 1, see paragraph 0022 the last 6 lines);

instructions (computer program, see paragraph 0011 the last 4 lines) for determining output information (displayed data on screen such as the hammer in Figure 1);

instructions (computer program, see paragraph 0011 the last 4 lines) for determining display layout adjustments for each of the at least two display associated with the views into virtual display space, the display layout adjustments based on the determined seam information and the output information (displayed data adjusted to change in size of display device using such as computer programs, see paragraph 0011); and

instructions (computer program, see paragraph 0011 the last 4 lines) for displaying the output information for each display based on the determined display layout adjustments (display data may be adjusted corresponding to change in size of display device, see paragraph 0011).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 9 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubin in view of Bradford (U.S Pat # 3, 139, 793).

As to claim 18, Durbin does not teach wherein determining the layout adjustments are determined by at least one: seam constrained movement of addressable object elements and repetition areas.

Bradford teaches determining the layout adjustments are determined by at least one: seam constrained movement of addressable object elements and repetition areas (e.g., the gap between 55 and 56 can be adjusted in order to fit on the screen, see Fig. 4 and col. 4, lines 44-53).

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to have added seam constrained movement of addressable object elements and repetition areas as taught by Bradford to seamless tiled display system of Dubin because the projector is illustrated mounted within a compact portable carrying case such as might be used in applications where the projector is frequently carried from place to place (see col. 10, lines 26-29).

As to claim 19, Dubin teaches where the repetition areas are based on at least one of pixels (e.g., the end pixels of (32) project the repetition areas, see Fig. 1).

As to claims 9 and 20, Bradford teaches wherein seam constrained movement is based on at least one of: nearest-point-to-nearest-point (e.g., x1 of the one side of 55 and x2 of the other side 56 on seam, see Fig. 4).

As to claim 21, Dubin teaches where the display layout adjustments are performed by the output information generator (22) (see [0052]).

As to claim 22, Dubin teaches where the output information is displayed in the seam (e.g., each adjacent LCD image (90) in fig. 5 displayed on screen image (92)). As to claim 17, Dubin teaches where determining the output image information for each display is based on intercepting the output information from at least one of: a device driver level (e.g., the

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL TSEGAYE whose telephone number is (571)270-1715. The examiner can normally be reached on Monday-Friday, 8:00:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr A Awad can be reached on 571 272 7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Tsegaye
Feb 15, 2008

AMR A. AWAD
SUPERVISORY PATENT EXAMINER
